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NORTH AMERICAN AIR DEFENSE COMMAND

Weekly Intelligence Review (U)

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INTELLIGENCE

RAND [redacted] PRIVIL[redacted]ATION

REC'D. MAY 25 1964

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Issue No. 21/64, 22 May 1964

The WIR in Brief

Portion identified as non-responsive to the appeal

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Space

POSSIBLE APPLICATION OF 65° COSMOS SPACECRAFT SUGGESTED

Latest study of current Cosmos series supports the strong possibility of a photoreconnaissance mission.

INITIAL ANALYSIS OF COSMOS 30 SUMMARIZED

Photoreconnaissance capability unchanged in the current Cosmos launch.

COVER: BEAR B bombers carrying ASMs (OFFICIAL USE ONLY)

NOTE: Pages 26, 28, 29, 32, 33, and 36 of this issue are blank.

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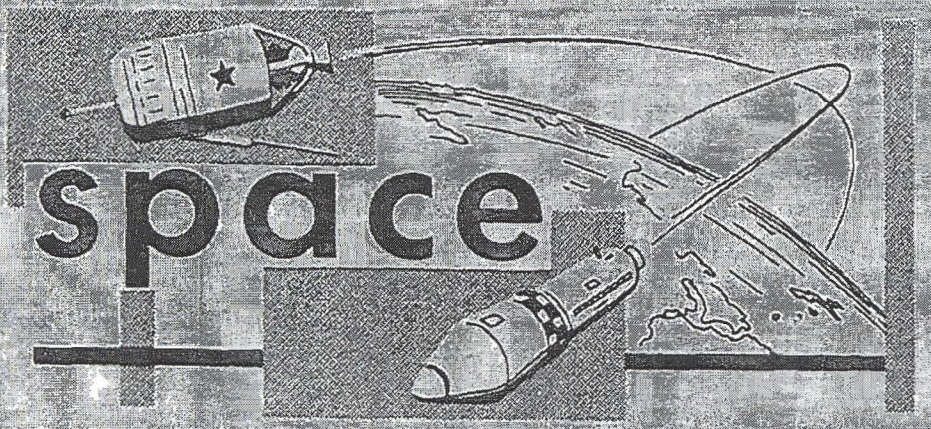

significant intelligence on space developments and trends

Possible Application of 65° Cosmos Spacecraft Suggested

Many aspects of the current series of Tyuratam Cosmos space vehicle launchings, which started on 26 April 1962, suggest that the Soviets may have achieved an IOC in space reconnaissance.

Open statements clearly indicate that the Soviets have seriously studied the impact of space on military strategy. The majority of known statements having a bearing on military space applications appeared after February 1962. This coincides fairly closely with the initiation of the TT Cosmos series.

There is as yet no firm evidence or report of operational space reconnaissance hardware as such, but many of the operational parameters of this series of spacecraft launchings tend to imply that some type, or types, of reconnaissance missions are being conducted. These aspects include:

- All TT Cosmos vehicles, although unmanned, are recovered. This indicates a considerable interest in either the vehicle, or its contents.
- All south-to-north ascending passes over the United States (which are at or near perigee) occur during daylight hours between 1030 and 1430 local standard time, thus providing maximum illumination of ground targets for photographic reconnaissance. Whether these passes over the United States are planned for that purpose, or result from the dictates of the Soviet recovery technique, they are compatible with reconnaissance missions.
- All recovered Cosmos vehicles since Cosmos XII except Cosmos XXI have orbited for a period of from 5 to 10 days. This is more than adequate time for complete photo reconnaissance coverage of the United States using a 70-80 degree angle coverage on the camera. This angular coverage would permit overlapping coverage with an earth swath width of approximately 260 s.m.

- The orbital parameters (apogee, perigee, period, and inclination) observed on this series of spacecraft are very similar, indicating a repetitive mission (See page 35). The TT Cosmos program does not show the normal mission progress and increase in capability that has been observed in other Soviet space programs such as Vostok and Lunik.
- The average altitude of these vehicles is between 170-180 s.m. This altitude is normally more indicative of a reconnaissance satellite than a meteorological satellite whose optimum altitude would be approximately 400 s.m.
- The relatively high resolution video which has been observed on several Cosmos vehicles appears to exceed the resolution required for a meteorological mission. In fact, the resolution noted approaches that required for some forms of reconnaissance.
- This series of TT Cosmos vehicles, while in Earth orbit, is stabilized and Earth-oriented. These factors make them ideal space platforms for a number of Earth-directed sensory systems.
- All payloads appear to be in the 10,000-pound category, which is sufficient size to carry multiple sensors in the performance of a variety of missions.

It has been suggested that a polar orbit would be best for a reconnaissance mission, as worldwide coverage is possible and data recovery may be made on more numerous orbits than possible from those satellites launched on lower inclinations. However, with the exceptions of the northern and southern extremities of the world, and under the current "cold war" situation in which real time or near real time retrieval of recorded data is not absolutely essential, the Soviets can perform adequate reconnaissance over the most critical areas by continuing to launch on the presently utilized 65° inclination.

NORAD Space Intelligence attaches special significance to the low perigee on the last nine vehicles in that it occurred at approximately 40 degrees North Latitude during the best hours for photo reconnaissance. The variations in apogee are apparently related to other experiments carried aboard the vehicle.

In addition, this inclination (65°) will permit them to use all currently available range and support facilities, alleviate the problem of polar launches triggering the US BMEWS system, and to cloak a military reconnaissance system under the guise of a scientific operation.

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Initial Analysis of Cosmos 30 Summarized

The Soviets launched their latest Earth satellite vehicle (Cosmos 30) from the Tyuratam Missile Test Range at about 0943Z on 18 May 1964. Initial detection by the Shemya FPS-17 radar at 1000Z was confirmed by positive RADINT from Diyarbakir and Shemya on Revolution 1, and by ELINT from mid-east and Alaskan facilities. At 1510Z, TASS announced the launch of Cosmos 30.

The orbital elements announced by TASS compare favorably with the initial SPADATS elements based on minimal data:

	TASS	SPADATS
Inclination	64.93 deg.	64.92 deg.
Period	90.24 min.	90.17 min.
Apogee	383.1 km	361.4 km
Perigee	206.6 km	205.9 km

Cosmos 30's primary mission of photo reconnaissance is indicated by close adherence to the launch window and perigee heights employed in previous recoverable operations, together with the [redacted] past Tyuratam Missile Test Range Cosmos vehicles.

Based on previous operations, it is expected that the Cosmos 30 vehicle will remain in orbit for about eight to ten days.

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TYURATAM COSMOS SATELLITES

Vehicle	Launch Date	Launch Time (Z)	Period (min)	Perigee (s. m.)	Apogee (s. m.)	Inclination (deg)	Average Height (s. m.)	Date of Recovery	Orbits Completed
Cosmos IV	26 Apr 62	1005	90.4 *	184	205	64.9	194	29 Apr 62	47
Cosmos VII	28 Jul 62	0922	89.9	130	229	65.0	179	1 Aug 62	64
Cosmos IX	27 Sep 62	0940	90.8	187	220	64.9	203	1 Oct 62	63
Cosmos X	17 Oct 62	0900	90.2	130	236	65.0	183	21 Oct 62	64
Cosmos XII	22 Dec 62	0936	90.5	131	252	65.0	191	30 Oct 62	128
Cosmos XIII	20 Mar 63	0830	89.8	127	209	64.9	168	29 Mar 63	158
Cosmos XV	22 Apr 63	0830	89.7	107	231	65.0	169	27 Apr 63	79
Cosmos XVI	28 Apr 63	0850	90.4	129	249	65.0	189	8 May 63	158
Cosmos XVIII	24 May 63	1034	89.4	130	137	65.0	158	2 Jun 63	143
Cosmos XX	13 Oct 63	0930	89.4	124	200	64.9	162	26 Oct 63	127
Cosmos XXI	11 Nov 63	0623	88.5	126	153	64.8	139	14 Nov 63	46*
Cosmos XXII	16 Nov 63	1034	90.3	126	212	64.9	169	22 Nov 63	96
Cosmos XXIV	19 Dec 63	0930	90.5	130	253	65.0	191	28 Dec 63	142
Cosmos XXVIII	4 Apr 64	0945	90.4	129	238	64.7	183	12 Apr 64	126
Cosmos XXIX	25 Apr 64	1021	89.5	137	176	65.0	156	3 May 64	127
Cosmos XXX	18 May 64	0943	90.2	128	225	64.9	176	X	X

* Payload apparently re-entered prematurely.
X Still in orbit

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